

Bedside Ultrasound Saves a Life: Massive Pulmonary Embolism in Acute Transverse Myelitis—A Case Report

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ABSTRACT

Background: Acute transverse myelitis (ATM) is a rare inflammatory disorder of the spinal cord associated with substantial neurological morbidity. Patients with severe motor deficits are at increased risk of venous thromboembolism due to immobilization and systemic inflammation. Massive pulmonary embolism (PE) occurring during the acute phase of ATM is exceedingly uncommon but carries a high risk of mortality, particularly in resource-limited settings where definitive imaging may not be readily available.

Case Presentation: We report the case of a 23-year-old woman who presented with rapidly progressive paraparesis, sensory abnormalities, and bowel-bladder dysfunction consistent with acute transverse myelitis. On the fourth day of hospitalization, she experienced a sudden deterioration characterized by hypotension, hypoxemia, and altered mental status. Given the lack of immediate access to CT pulmonary angiography (CTPA), point-of-care ultrasound (POCUS) was used as a crucial diagnostic tool. The POCUS findings demonstrated right ventricular dilation with McConnell's sign and a non-compressible left popliteal vein, highly suggestive of massive pulmonary embolism accompanied by deep vein thrombosis. Based on these bedside findings, systemic thrombolysis with alteplase was promptly administered prior to confirmatory imaging. Subsequent CTPA confirmed the presence of massive bilateral pulmonary embolism. Further evaluation revealed longitudinally extensive transverse myelitis (LETM), a positive autoimmune profile indicative of myelin oligodendrocyte glycoprotein antibody-associated disease (MOGAD), and concurrent pulmonary tuberculosis. The patient achieved hemodynamic stabilization following thrombolysis and anticoagulation.

Conclusion: This case highlights the vital role of POCUS as a rapid bedside diagnostic tool for identifying massive pulmonary embolism in patients with acute neurological conditions, particularly in resource-constrained settings. Integrating focused cardiac and venous ultrasound into the initial evaluation of hemodynamically unstable patients with ATM may facilitate timely reperfusion therapy and enhance clinical outcomes when advanced imaging is unavailable or delayed.

Keywords: Point-of-care ultrasound, massive pulmonary embolism, acute transverse myelitis



Figure 1. Chest X-ray (AP sitting) showing hazy opacities with suspicious lucency in the right upper lobe consistent with PTB with cavitary change.

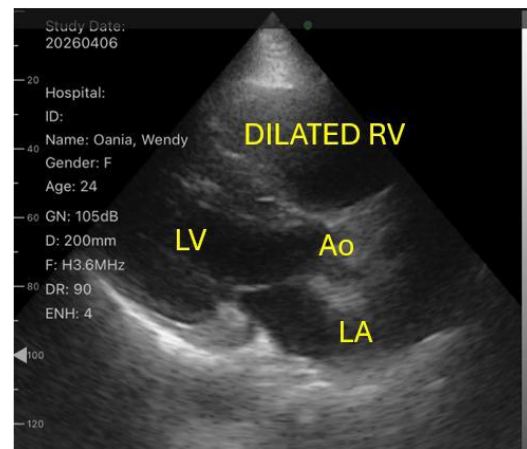


Figure 2. Parasternal Long Axis View demonstrating dilated right ventricle (RV). Left ventricle (LV), aorta (Ao), Left atrium (LA) labeled.

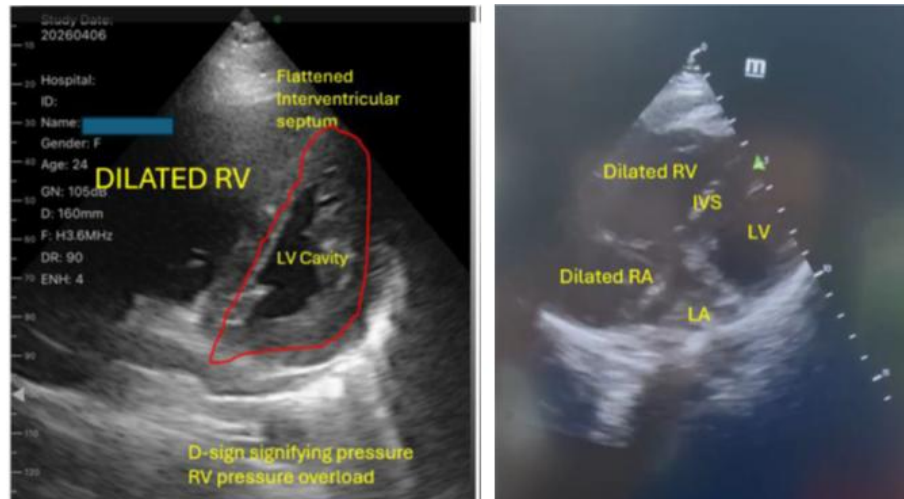


Figure 3. Parasternal Short Axis View (left) showing dilated RV with flattened interventricular septum and D-sign, signifying RV pressure overload. The LV cavity is compressed into a D-shaped configuration.

Apical 4-Chamber View (right) showing dilated right ventricle and dilated right atrium (RA) with interventricular septum (IVS) bowing toward the left ventricle. RV dilation is evident with increased RV/LV ratio.